

Summary of Disclosed Embodiments

The present application describes various embodiments of a user model that, in one embodiment, can be implemented in an interactive television system. An interactive television system may include a number of elements including a headend to which a plurality access devices (e.g., set top boxes or STBs) may be connected. A number of individuals may live in a house in which multiple access devices may be located. The access devices may be considered client systems.

In one aspect, the user model of the present application organizes an interactive television system by establishing software "objects" that represent the various households and the access devices and individual users in the households that make up the interactive television system. As depicted in FIGURE 5, a "household object" 202 (or simply "household") may be associated with an account in the television system. Associated with the household are "access device objects" and "user objects" that represent the access devices and users, respectively, in the household. The access devices in the household are configured to be logical extensions of each other.

The use of "objects" is known in computer programming for organizing executable code and data, but has heretofore not been applied outside of computer programming. The present application presents a novel application of an "object-oriented" approach to organizing households, access devices, and users in an interactive multimedia environment.

Once established, an "object" can be instantiated in an electronic system and provide functionality to the electronic system. Multiple instances of an object can be set up to represent multiple entities. Thus, a household object can have multiple access device objects and multiple user objects associated therewith, wherein each instance of an object has a configuration of attributes and data.

A user in a household may establish a user object to represent the user in the system and the object, once established, may be instantiated in the multiple access devices in the household. The instances of the user object in the access devices all share a common origin and thus have the same organization of attributes and data. This aspect of the present invention allows a user to create or reconfigure a user object by logging on to an authorized user object at any one of the access devices of the household. The other access devices (if any) in the household may automatically receive the new or reconfigured user object information without further action by the user. This aspect advantageously allows a single operation to configure and/or reconfigure all of the access devices in a household with the user object information of a new or revised user object.

In another aspect of the present application, when a user adds a new access device to the household, the new access device may automatically receive the user object information of user objects already existing in the household, without further action by the user. In one embodiment, this automatic exchange of user object information between instances of a user object is coordinated by a server that stores the configuration information of each household and its associated user objects. This server, for example, can be operated by a multiple service operator (MSO) or service provider. Alternatively, the server may be at a broadcast center for a satellite broadcast system.

Patentability of Claims 1 and 11 Over Williams

The Office Action cited Williams as anticipating the subject matter set forth in Claims 1 and 11. Applicants respectfully disagree. For the convenience of the Examiner, Claim 1 is repeated as follows:

1. A system for viewing multimedia content, the system comprising:
a communication network;

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a content source coupled to the communication network;
a broadcast center coupled to the communication network;
and
a plurality of client systems coupled to the broadcast center,
wherein the plurality of client systems is associated with a household, the
plurality of client systems being logical extensions of each other.

Williams is directed to a system in which users can use their television sets as display devices to access a local area network in the home. A server in the network uses segregated memory frames to provide separate "desktop" environments to the different TVs in the home. Each TV essentially acts as a separate dumb terminal that can communicate with a server in the home to provide separate computing environments to different users in the home. As explained by Williams:

A method and apparatus are provided for enabling multiple users to concurrently access a PC-based server in a home local area network using conventional TVs as display devices. A client system includes a TV, conventional input devices, such as a keyboard and a mouse, and a set top box for interfacing the TV to the network. The server maintains a system work area and multiple processes corresponding to user applications. The system work area is partitioned in the server into multiple independent, simultaneously active desktops, one desktop for each of the client systems. Individual processes are mapped to the appropriate desktop. Multiple frame buffers are maintained in the server, such that a different frame buffer is assigned to each client system. Each desktop is rendered within the server and stored in the corresponding frame buffer. The contents of

each frame buffer are transmitted over a transmission medium to the set top box of the corresponding client system. Desktop display data is provided by the set top box to the corresponding TV for display to a user.

(See the abstract in Williams.)

With respect to Claim 1 of the present application, the Office Action states that the claimed "communication network" and "content [source] & broadcast center coupled to the communication network" reads on the disclosure in Williams "that a local network of set-top box 22, is connected to a CATV headend via a server 20", citing in particular Figure 5 and Col. 5, lines 1-12, of Williams. Applicants respectfully disagree. Figure 5 of Williams clearly shows that the local network connects to a cable system via a programmable channel filter 62, quite separately from the server 20.

The Office Action further asserts that the claim element "a plurality of client systems coupled to the broadcast center, wherein the plurality of client systems is associated with a household, the plurality of client systems being logical extensions of each other" is met by Williams' disclosure of a prior art local area network that includes multiple computing devices (in this case, set top boxes 22) connected to a server 20 within a single customer premise. Applicants respectfully disagree.

In particular, applicants disagree that Williams teaches anything about a plurality of client systems that are logical extensions of each other. Quite the opposite, Williams teaches a server 20 having a system work area that is partitioned into *multiple independent, simultaneously active desktops*, one desktop for each of the set top boxes 22. Processes that pertain to different desktops are individually mapped to the appropriate desktop. In other words, the desktop shown on each TV display device is separate and unrelated to desktops shown on the other TV display devices.

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The Office Action cited, in part, Col. 3, lines 40-46, of Williams, which reads as follows:

Each desktop is rendered into a *separate, dedicated frame buffer* in the server PC. The video data in each frame buffer are then transmitted to the corresponding set top box, which then provides display data to its owning TV for display as a desktop. Each set top box/TV combination represents a very "thin" client, since virtually all processing functions remain in the server.

(Emphasis added.)

At most, the set top boxes 22 and their associated TV display devices in Williams are separate physical extensions over which different users may access computing services of the server 20, but they are not *logical extensions of each other* as recited in Claim 1. For the foregoing reasons, Claim 1 is not anticipated by Williams and should be allowed.

For the same reasons Claim 1 is patentable over Williams, Claim 11 is also patentable over Williams. The Office Action did not set forth separate reasons for rejecting Claim 11. Williams does not anticipate the means recited in Claim 11; thus, Claim 11 should be allowed.

Patentability of Claims 1, 3-11 and 13-22 Over Ellis

The Office Action cited Ellis as anticipating the subject matter set forth in Claims 1, 3-11 and 13-22. Applicants respectfully disagree.

In particular, applicants disagree that Ellis teaches anything about a plurality of client systems that are logical extensions of each other. Ellis is directed to an interactive television program guide system that can address multiple devices within a household. Ellis merely teaches that a local network in a home may assume a variety of network topologies.

Ellis explains as follows:

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The program guides may be linked using suitable topologies and communication protocols. For example, the various pieces of user television equipment may be interconnected using a tree, bus, or ring topology. One piece of user television equipment may be designated as a primary device and other pieces of user television equipment may be designated as secondary devices. The primary and secondary devices may be connected in a star arrangement. A remote server may be used to implement certain program guide features and the pieces of user television equipment in the home may act as clients.

(See page 6, lines 6-18.)

FIG. 4a shows an illustrative tree configuration in which each piece of user television equipment is interconnected with another along a single path. . . . With the arrangement of FIG. 4a, each piece of user television equipment may communicate with each other piece of user television equipment in home 65 over communication paths 70.

(See page 17, lines 9-12 and 27-31).

Certain communication protocols may be particularly suitable for certain topologies of user television equipment devices. For example, if the user television equipment devices are arranged in a ring topology, a token ring communications protocol may be used to interconnect the program guides. A bus protocol may be used for a bus topology, etc. An advantage of using an in home network is sharing of data among devices

within the home. For example, a listing may be stored on only one device, freeing space for other settings to be stored on other devices.

(See page 40, line 34 to page 41, line 10.)

As with Williams, Ellis merely teaches that a computer network may be used in the home. While Ellis depicts various user television equipment devices having communication paths to each other according to different network topologies, Ellis does not teach that the different devices are logical extensions of each other. Quite the opposite, Ellis teaches that the different devices may maintain different data for use by the equipment in the system. As noted above, according to Ellis, "a listing may be stored on only one device, freeing space for other settings to be stored on other devices." The user television equipment devices in Ellis merely communicate data to one another as needed. That the user television equipment is networked to each other does not inherently teach or suggest that the devices are *logical extensions of each other* as recited in Claim 1. For the foregoing reasons, Claim 1 is not anticipated by Ellis and should be allowed.

In support of the rejection of Claim 3, the Examiner argued that "the claimed 'plurality of user objects associated with a plurality of client systems', is met by the disclosure in Ellis of the EPG that enables a parent to name and associate characteristics to each of the rooms in a household," citing pages 24-26 of Ellis. Applicants respectfully disagree. Ellis teaches nothing about an object-oriented approach to organizing households and users in those households in an interactive television system.

The Examiner is apparently equating a plurality of user objects with Ellis' ability to name different user television equipment in a household. Applicants submit that the ability to name user television equipment as described by Ellis is not equivalent to a plurality of user objects as recited in Claim 3. The passages cited by the Examiner disclose nothing that would even suggest

configuring a household so that it is associated with a plurality of user objects as recited in Claim 3.

In support of the rejection of Claim 4, the Examiner argued that Ellis' disclosure of a parent changing the settings of STBs in the household anticipates a "client system ... configured to be selectively accessed by a user to change a configuration of a user object ..., the system being configured to provide the change to all of the client systems of the plurality of client systems without further activity from the user." Applicants respectfully disagree.

Applicants have carefully reviewed the cited passages at pages 25-26 and other passages in Ellis, and have found nothing that suggests an implementation of user objects as claimed nor anything that discloses providing changes to all of the client systems without further activity from the user. To the contrary, Ellis specifically requires action from the user to indicate where system changes are to be applied. See, e.g., Figure 14 and the related discussion on page 26 of Ellis. See also Figures 18a and 18b of Ellis where the user must choose to "Apply to all", "Select locations", or "Apply to current location," to indicate how changes in settings should be applied.

The Office Action did not provide any comment supporting a rejection of Claim 5. Applicants submit that the claimed element in which "the system is configurable to selectively add a new client system to the plurality of client systems, the system being configured to provide the plurality of user objects to the new client system without activity from a user" is not taught or suggested by Ellis, and thus should be allowed.

In support of the rejection of Claim 6, the Examiner argued that a centralized ability to control a plurality of client systems as taught by Ellis anticipates the claim element "wherein a user object of the plurality of user objects can be concurrently active in more than one client system of the plurality of client systems." The cited passages at Ellis, page 24, lines 7-25, does

not support the rejection of Claim 6. As discussed above, Ellis teaches nothing about user objects that can be instantiated in multiple client systems. Claim 6 should be allowed.

In support of the rejection of Claim 7, the Examiner argued that Ellis' disclosure of an "interactive EPG 173, for instance shown in Fig. 12, which can be accessed by all the users" anticipates the claim element "wherein the plurality of user objects includes an anonymous user object, wherein the anonymous user object is configured to be accessible to all users." Applicants respectfully disagree.

The Examiner is apparently equating a user object with a feature in which a user can remotely access an EPG over a networked system. Applicants submit that remote access of an EPG is not equivalent to establishing a user object that can be instantiated in various access devices, let alone an anonymous user object that can be accessed by all the users of the access devices. Claim 7 should be allowed.

As to Claim 8, applicants again note that Ellis teaches nothing about user objects as taught and claimed in the present application. Thus, Ellis cannot anticipate "a server operatively coupled to the plurality of client systems, wherein the server is configured to include information related to each user object of the plurality of user objects" as claimed, notwithstanding the cited disclosure in Ellis of a master device that can be used to adjust the controls and settings of other devices. Claim 8 should be allowed.

Claim 9 further recites "the server is configured to include a revision history, the revision history being configurable to include information related to configuration changes of the plurality of user objects." The Examiner argued that this claim element is anticipated by Ellis, citing in particular pages 5 and 32, lines 1-10. Applicants have reviewed the cited passages and respectfully disagree. The notion of adjusting screen settings of each of the set top boxes, as discussed in the Office Action, suggests nothing about including a revision history that is

configurable to include information related to configuration changes of a plurality of user objects. Claim 9 is patentable over Ellis.

In support of the rejection of Claim 10, the Examiner asserted that the claim element "wherein the revision history includes a ticket number associated with each configuration change that is included in the revision history" is taught by Ellis, page 26, lines 25-30. Applicants respectfully disagree.

The only relevant disclosure in Ellis appears to be the existence of a number that the program guide can use to access settings from a remote location. There is nothing in Ellis to suggest that revisions to the program guide are tracked for individual users in the household. Moreover, as with Claim 9, there is nothing in Ellis that discloses a "revision history" as claimed.

In support of the rejection of Claim 11, the Examiner relied upon the same arguments discussed above with respect to Claim 1. In particular, Examiner argued that Ellis' disclosure of a plurality of set top boxes anticipates "a plurality of access means, coupled to the distribution means, for selectively providing access to the multimedia content, wherein the plurality of access means is associated with a household, the plurality of access means being logical extensions of each other." Applicants respectfully disagree.

In particular, applicants disagree that Ellis teaches anything about a plurality of access means that are logical extensions of each other. Ellis simply teaches an interactive television program guide system that can be implemented in multiple devices within a household and that a local network in the home may assume a variety of network topologies. That the user television equipment disclosed by Ellis is networked to each other does not mean that the devices are *logical extensions of each other* as recited for the access means set forth in Claim 11. For the foregoing reasons, Claim 11 is not anticipated by Ellis and should be allowed.

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In support of the rejections of Claims 13-20, the Examiner relied on his discussion of Claims 3-10 (with the applicants noting that as with Claim 5, the Examiner did not specifically address Claim 15). Applicants have carefully reviewed Claims 13-20 and the arguments presented above with respect to Claims 3-10 and submit that Claims 13-20 are allowable over Ellis for the same reasons discussed above.

Considering Claim 21, the Examiner argued that Ellis anticipates each and every element of Claim 21. Applicants disagree. Claim 21 reads as follows:

21. A method for viewing content delivered to a client system, the method comprising:

associating a plurality of client systems with a household;
organizing the plurality of clients systems associated with
the household into logical extensions of each other; and
delivering content from a content source via a
communication network to at least one of the plurality of clients systems
in accordance with the organization into logical extensions.

While Ellis teaches that a computer network may be used in the home and further depicts various user television equipment devices having communication paths to each other according to different network topologies, Ellis does not teach that the different devices are organized into logical extensions of each other. As discussed above relative to Claim 1, Ellis teaches quite the opposite. For example, Ellis teaches that the different devices may maintain different data. "[A] listing may be stored on only one device, freeing space for other settings to be stored on other devices." (Page 41, lines 8-10, of Ellis.) The user television equipment devices in Ellis merely communicate data to one another as needed. Simply because the user television equipment is networked to each other does not inherently teach or suggest that the devices are *organized into*

logical extensions of each other as recited in Claim 21. For these reasons, Claim 21 is not anticipated by Ellis and should be allowed.

Claim 22 should also be allowed. Claim 21 includes, in part, "associating a plurality of user objects with the household, each user object containing information related to a user in the household" and "providing the plurality of user objects to all of the client systems of the plurality of client systems associated with the household." Applicants have discussed above in detail how Ellis, at most, teaches networking of user television equipment in a home. Ellis does not teach anything about associating user objects with a household and providing the user objects to client systems associated with the household, as claimed. An object-oriented approach to organizing households, access devices, and users in an interactive television environment is truly novel and non-obvious in view of the prior art.

CONCLUSION

In view of the foregoing remarks, applicants submit that all of the claims in the present application are patentably distinguished over the teachings of Williams and Ellis. Independent Claims 1, 11, and 21 are clearly and patentably distinguished over the cited and applied references. Claims 3-10, 13-20, and 22 are allowable because they depend from allowable independent Claims 1, 11, and 21, and because of the additional features they recite. Applicants respectfully request reconsideration and allowance of Claims 1, 3-11, and 13-22 at an early date. If the Examiner has any remaining questions concerning this application, the Examiner is invited to contact applicants' undersigned attorney at the number below.

Respectfully submitted,

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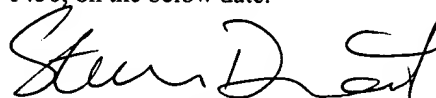


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1. 9. 2006



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